

BEFORE THE  
FEDERAL COMMUNICATION COMMISSION  
WASHINGTON, D.C. 20554

In the Matter of )  
 )  
Innovation in the Broadcast Television Bands: )  
Allocations, Channel Sharing and Improvements ) ET Docket No. 10-235  
to VHF )  
  
To: The Commission

**REPLY COMMENTS**

Khanna & Guill, Inc. - Consulting Engineers, hereby submits its reply comments in response to the Notice of Proposed Rulemaking (“NPRM”) in the above referenced proceeding concerning the Commission’s proposals to repurpose up to 120 megahertz of spectrum from the broadcast television bands for new wireless broadband services and provide improvements to VHF television service.

The principals of the firm of Khanna & Guill, Inc. have been providing consulting engineering services to the radio-television broadcast industry for more than 38 years.

These comments are made particularly with regard to the technical aspects of the proposals listed in the NPRM.

**Broadcast Television Channel Sharing**

We agree with the NAB/MSTV comments that the Commission should request comments and consider all related and relevant issues rather than a few topics listed in the

NPRM<sup>1</sup>. We also believe it is important to include discussion of re-packing of the TV spectrum and its impact on TV broadcasting while considering the proposal for channel sharing. As pointed out by NAB and highlighted in Khanna & Guill, Inc comments, even if TV channel sharing is used there would not be sufficient spectrum available in certain areas of the country to accommodate all currently licensed (and proposed) TV stations, after 120 MHz spectrum is taken away. In addition, the Commission recognizes that two HD stream cannot be accommodated within 6 MHz band. One of the main purposes of conversion from analog to digital TV was to provide superior quality pictures. With channel sharing some of the TV stations would be left to broadcast in analog quality pictures defeating one of the main reasons of conversion to digital broadcasting. The TV industry has spent decades of research, considerable amount of time and effort to develop the digital television system. Many TV stations are providing mobile TV and multi-casting to make full use of the allotted 6 MHz spectrum. Further research is being conducted for higher resolution of picture quality, including progressive scanning, 4k and even 40k line system which would require higher bandwidth. Sharing of a 6 MHz channel by two TV stations may not allow further enhancements in television picture quality.

### **Improving Reception of VHF TV Service**

We agree with the NAB/MSTV comments that the proposed increase ERP for the VHF stations would not be enough to overcome the inherent deficiencies of this spectrum<sup>2</sup>. However,

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<sup>1</sup> See NAB/MSTV comments in Executive Summary “We note, however, that this NPRM addresses only three discrete matters when, in reality, the issues raised are far broader. The three proposals discussed in the NPRM are integrally related to an array of other issues that are not formally within the scope of this NPRM.

<sup>2</sup> See NAB/MSTV comments on page 19.

we believe an increase in ERP in conjunction with better receive antennas would alleviate some of the TV reception problems in the VHF spectrum. There has been significant improvement in the TV receiver designs since the introduction of first generation of digital receivers to mitigate multipath problems and impact of impulse noise generated in the VHF spectrum. Further improvement in television receiver designs, a normal function of research and development for all technical products, would also help improve reception of TV signals in the VHF band

Respectfully submitted,

Khanna & Guill, Inc.

A handwritten signature in dark ink, appearing to read 'S. K. Khanna', written over a horizontal line.

S. K. Khanna, P.E.

Robert W. Guill

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